



Autumn Term Knowledge Organisers

Year Five



What are these?

The following knowledge organisers are developed based on the progression documents for the subjects.

Every effort has been made to provide the learners with support for learning and understanding the essential skills in each aspect of the subject.

Children should learn to and understand the key vocabulary and should be utilising this in varying contexts.

The children should use opportunities to link these facts to other areas of learning and other areas of the curriculum.

Simply providing the children with these organisers will not support them in their learning. Their use will be specifically taught in school and the children must see these as a learning aid.

The knowledge organisers are developed to be double sided with each child having their own copy, which they annotate to help support them further and or use to track their progress.

Why use them?

Working memory - This is where thinking actually happens. It has a very finite capacity; it can only hold and process about four different items at a time. If it receives too much it fails.

Long-term memory - Long-term memory has huge – almost infinite – capacity. It is here that we store our knowledge of facts and procedures. The goal is to stock our long-term memories with knowledge in a well organised, easily retrievable way and make recall of key aspects automatic. This frees up the working memory for new information.

Cognitive load - This is the term used in cognitive science to describe how much capacity something takes up in the working memory. Cognitive overload is what happens if too many demands are placed on working memory at once.

The aim of the knowledge organisers is to improve the speed with which information is stored in the long term memory, thus improving the learners ability to develop deep learning in more areas of the curriculum.

How can these be used at home?

There are several ways that you can use knowledge organisers with children.

1. Look at the previous knowledge organiser to see how their learning is growing and see where there are links to what has already been learned.
2. Use it to look at what your child will be learning and share what you know about that topic.
3. Have the knowledge organisers on the fridge/appropriate place at home and use it to prompt discussion around the topic at home.
4. Help your child to research the topic and bring information in to school to share with their class.
5. Areas of the knowledge organisers are purposely blank so children can add information to support them further eg starring any aspects that they find tricky, adding any key sentences which they struggle with.
6. Vocabulary prompts – use the vocabulary bank to support children in utilising the correct topic related vocabulary.
7. Parents can challenge children to recall the appropriate information and explain what it means – but should be aware that the children will not know this from the start of the term.

How are they not to be used?

These provide a brief overview of what the children should securely know by the end of that year group. They should NOT be utilised as an end point assessment and links must be made to other areas of learning.

These knowledge organisers, are a starting point and will need to be adapted over time in response to the needs of the children.

Negative Numbers

Negative numbers are numbers less than zero:

-5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5, ...
 negative positive

The temperature during the day is 5°C. During the night, it drops by 8°C. What is the new temperature?
 Answer: $5 - 8 = -3$ (say: minus 3 degrees)

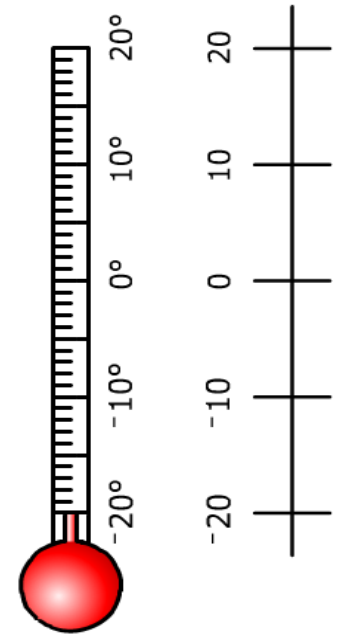
ORDER AND COMPARE NUMBERS BEYOND 1000

Roman Numerals

| | | |
|-----|------|---------------|
| 1 | I | 1 |
| 2 | II | 1 + 1 |
| 3 | III | 1 + 1 + 1 |
| 4 | IV | 5 - 1 |
| 5 | V | 5 |
| 6 | VI | 5 + 1 |
| 7 | VII | 5 + 1 + 1 |
| 8 | VIII | 5 + 1 + 1 + 1 |
| 9 | IX | 10 - 1 |
| 10 | X | 10 |
| 20 | XX | 10 + 10 |
| 50 | L | 50 |
| 90 | XC | 100 - 10 |
| 100 | C | 100 |

One Million = 1, 000, 000 (six zeros – or six digits after the million digit)

Vocabulary
 negative
 positive
 compare
 value
 tenth
 hundredth
 decimal equivalents
 nearest whole number
 one decimal place



Place Value Chart

| Millions | | | Thousands | | | Ones | | |
|-----------------|-------------|-------------|------------------|--------------|--------------|----------|------|------|
| Hundred million | Ten million | One million | Hundred thousand | Ten thousand | One thousand | Hundreds | Tens | Ones |
| 1 | 2 | 3, | 4 | 5 | 6, | 7 | 8 | 9 |

Standard Form: 123,456,789
 Expanded Form: $100,000,000 + 20,000,000 + 3,000,000 + 400,000 + 50,000 + 6,000 + 700 + 80 + 9$

Word Form: one hundred twenty-three million, four hundred fifty-six thousand, seven hundred eighty-nine



Five & Six – Place Value



DECIMAL PLACE VALUE CHART

| | | | | | | | | | | |
|--------------|-------------------|---------------|---------------|----------|------|------|---------------|--------|------------|-------------|
| One Millions | Hundred Thousands | Ten Thousands | One Thousands | Hundreds | Tens | Ones | Decimal point | Tenths | Hundredths | Thousandths |
| | | | | | | | . | | | |

Decimal Places

To round 7.63 to 1 decimal place

7.63

↑ 3 is less than 5 (half way) so round down

7.63 rounded to 1 decimal place is 7.6

To round 16.79 to 1 decimal place

16.79

↑ 9 is greater than 5 (half way) so round up

16.79 rounded to 1 decimal place is 16.8

Rounding to the nearest 1000: **Step one** identify the 1,000 digit. **Step two** identify if it rounds up or down (see the rounding coaster). **Step three** write the digits before the thousands (if there are any) **Step four** write the rounded thousand number.



| | | |
|-------|---|------|
| 12 | → | 10 |
| 114 | → | 110 |
| 57 | → | 60 |
| 1,334 | → | 1330 |
| 1,488 | → | 1490 |
| 97 | → | 100 |


| | | |
|--------|---|---------|
| 7,891 | → | 7,900 |
| 15,753 | → | 15,800 |
| 99,961 | → | 100,000 |
| 3,350 | → | 3,300 |
| 450 | → | 500 |

| | | |
|---------|---|---------|
| 8,800 | → | 9,000 |
| 1,015 | → | 1,000 |
| 12,450 | → | 12,000 |
| 333,878 | → | 334,000 |
| 400,400 | → | 400,000 |

inverse operations


Opposite operations.

Addition
← inverse →
Subtraction



$$4 + 2 = 6$$

$$2 + 4 = 6$$



$$6 - 4 = 2$$

$$6 - 2 = 4$$

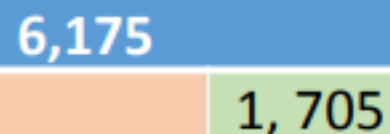
$$\begin{array}{r} 256 \\ + 423 \\ \hline 679 \end{array}$$

$$\begin{array}{r} 679 \\ - 423 \\ \hline 256 \end{array}$$

I can solve these using my number fact knowledge and understanding of place value.

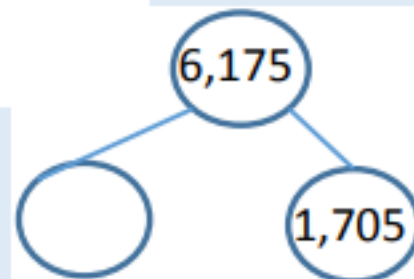
$$\begin{array}{r} 34 \square 1 \square \\ - \square 482 \\ \hline 292 \square 4 \end{array}$$

I can decide on the best method of calculating – mental, jottings or full written method. Eg $6,757 - 4,199 =$



I can use a bar model to help solve missing number questions

Part whole model



Vocabulary

+ add, addition, plus, more, make, sum, total

- take away, subtract, minus, leave, less, difference between

= equals, makes, totals, balances

Inverse - inverse operations - opposite, reverse operations.

Addition and subtraction

789 + 642 becomes

$$\begin{array}{r} 789 \\ + 642 \\ \hline 1431 \\ \hline 11 \end{array}$$

Answer: 1431

I can solve these calculations with 4 digit numbers

874 - 523 becomes

$$\begin{array}{r} 874 \\ - 523 \\ \hline 351 \end{array}$$

Answer: 351

932 - 457 becomes

$$\begin{array}{r} 8 \quad 12 \quad 1 \\ 932 \\ - 457 \\ \hline 475 \end{array}$$

Answer: 475



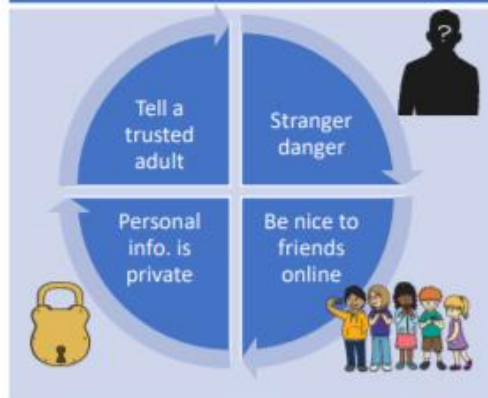


LKS2 Online Safety



If you have any concerns or worries, please tell a trusted adult. You can also contact the police via www.ceop.police.uk/ceop-reporting/

What should I already know about keeping safe?



It's fun chatting with known friends 😊

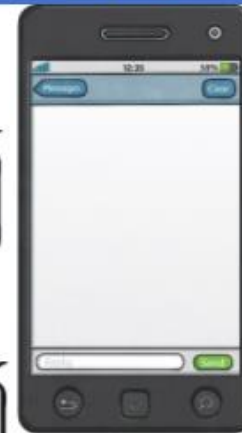
- ✓ Be nice and friendly when online.
- ✓ Only chat with people you know.
- ⊗ Some people can be unkind online.
- ⊗ This can make others feel unhappy, sad and lonely.
- ⊗ If someone is unkind **several times on purpose then this could be bullying (STOP!)**
- ✓ If we see this, then we must tell a trusted adult.



Online bullying. Be SMART!

With you?

We're all out. You're not invited.



Anyone playing out tonight?

Yes. Is that OK?



⊗ What one person perceives as a joke (or banter) might be experienced by others as bullying. This could be via a text, an image or chat.

⊗ If you recognise that someone is upset, angry or hurt you must report this.

⊗ Online bullying is unacceptable and school staff will ensure it stops.

Tell someone! Tell an adult if someone or something makes you worried or uncomfortable.

- Report the unkind actions to a teacher or the Learning Mentor at school. We will investigate the report carefully.
- E-mail us: safeguarding@allsaintsfed.Derbyshire.sch.uk
- Block the person who is being unkind.
- Contact Childline: 0800 11 11
- Chat online to Childline: www.childline.org.uk

Science Knowledge Organiser

Physics - Forces

What should I already know?

- Know what a **force** is and be able to explain that a push and pull are types of **forces**.
- That when **forces** are applied to an object they allow them to move or stop moving.
- The strength of the **force** determines how far and fast an object moves.
- **Friction** is the **resistance of motion** when there is contact between two **surfaces**
- The **force** that causes objects to move downwards towards the ground is **gravity**.
- That **magnets** have poles, and that **opposite poles attract**, while similar poles **repel**.

| Key Vocabulary | |
|-----------------------------------|---|
| forces | Pushes or pulls. |
| gravity | A pulling force exerted by the Earth (or anything else which has mass). |
| Earth's gravitational pull | The pull that Earth exerts on an object, pulling it towards Earth's centre. It is the Earth's gravitational pull which keeps us on the ground. |
| weight | The measure of the force of gravity on an object. |
| mass | A measure of how much matter (or 'stuff') is inside an object. |

The Moon has a smaller **mass** than Earth so the **gravitational pull** on the Moon is smaller than it is on Earth.

Jupiter has a greater **mass** than Earth so the **gravitational pull** on Jupiter is stronger than on Earth.

| Key Knowledge | | Isaac Newton |
|-------------------------------------|-------------------|--------------|
| Forces | | |
| start to move. | stop moving. | |
| change direction. | move faster. | |
| Forces can make an object... | | |
| change its shape. | move more slowly. | |

Mass is how much matter is inside an object. It is measured in kilograms (kg).

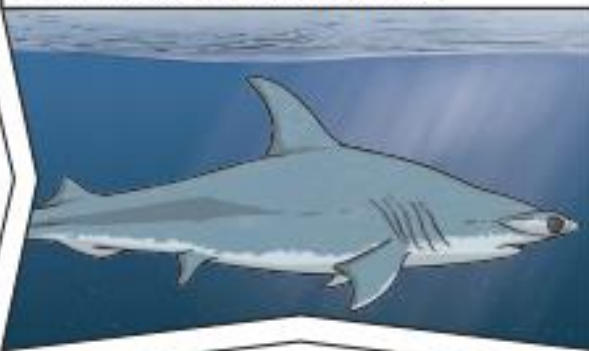
Weight is how strongly **gravity** is pulling an object down. It is measured in newtons (N).

Isaac Newton is famously thought to have developed his theory of **gravity** when he saw an apple fall to the ground from an apple tree.

| Key Vocabulary | |
|-------------------------|---|
| friction | A force that acts between two surfaces or objects that are moving, or trying to move, across each other. |
| air resistance | A type of friction caused by air pushing against any moving object. |
| water resistance | A type of friction caused by water pushing against any moving object. |
| buoyancy | An upward force that a liquid applies to objects. |
| streamlined | When an object is shaped to minimise the effects of air or water resistance . |
| mechanism | Parts which work together in a machine. Examples of mechanisms are pulleys, gears and levers. |

It has a pointed nose to cut through the water, and a smooth, low, curved back to allow the water to flow over and around it.

This shark is **streamlined**.



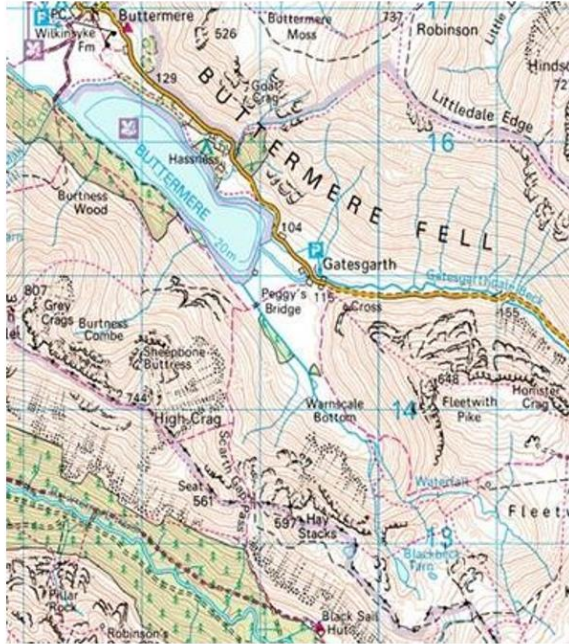
It does not create much **water resistance** so it can move through the water quickly.

| Key Knowledge | | |
|---|--|--|
| Examples of forces in action: | | |
| <p>swimmer's force water resistance</p> | <p>gravity air resistance</p> | <p>cyclist's driving force friction</p> |
| <p>Water resistance and air resistance are forms of friction. Friction is sometimes helpful and sometimes unhelpful. For example, air resistance is helpful as it stops the skydiver hitting the ground at high speed. Friction on a bike chain can make the bike harder to pedal so it is unhelpful.</p> | | |

| Pulleys | Gears/Cogs | Levers |
|--|--|--|
| | | |
| <p>Pulleys can be used to make a small force lift a lighter load. The more wheels in a pulley, the less force is needed to lift a weight.</p> | <p>Gears or cogs can be used to change the speed, force or direction of a motion. When two gears are connected, they always turn in the opposite direction to each other.</p> | <p>Levers can be used to make a small force lift a lighter load. A lever always rests on a pivot.</p> |



Geography – What shape is my world?



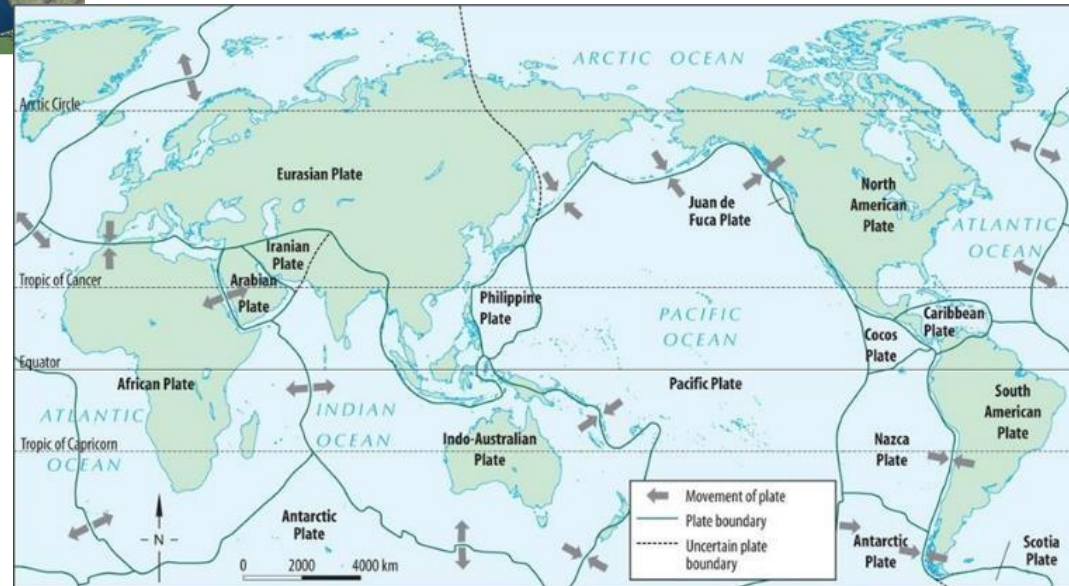
Buttermere glaciated valley in The Lake District.

U shaped with very steep sides as indicated by tightly packed contour lines either side of the lake.



Rivers work hard. They hardly stop and so continually erode the **channel** and move material **downstream**. This shape and alters the land. The river water pushes stones, boulders and rocks along the **course** of the river. Rivers can become **wider** and **deeper** or even change their shape. As the river moves further away from its **source**, the material that has been eroded at the start of the river's journey is carried (transported) downstream and gradually left behind (deposited). This changes the shape of the land; **gorge, waterfall, meander, flood plains, ox bow lake**, until as the river reaches the **mouth**, any remaining material is deposited forming a **delta**.

The Earth's crust is modified by coastal process as waves shape (erosion and deposition) the coast leading to new landforms. Human activity such as farming, settlement, transport, mining all affect landscapes as well as climate.





Meander, oxbow lake and flood plain on the River Rhone, France



Niagara Falls - erosion



Grand Canyon - erosion

| | | | | | | |
|-------------|-----------------|------------|---------------|---------------|-------|------------|
| process | human | physical | climate | weather | ice | glacier |
| water cycle | tectonic plates | biomes | climate zones | Earth's crust | biome | vegetation |
| erosion | coastal process | deposition | | | | |

History - Britain's settlement by Anglo-Saxons and Scots

The Roman army left Britain around AD 410. When they had gone there was no strong army to defend Britain, and tribes called the Angle, Saxon, and Jute (the Anglo-Saxons) invaded. They left their homelands in northern Germany, Denmark and northern Holland and rowed across the North Sea in wooden boats.



Key Vocabulary

- Tribe
 - Invasion
 - Settlers
 - Settlement
 - Kingdom
- BC (Before Christ)
 - AD (Anno Domini)

| | |
|--------|--|
| AD 449 | First invasions of the Jutes from Jutland, Angles from South of Denmark and Saxons from Germany. Britain is divided up into the Seven Kingdoms of Northumbria, Mercia, Anglia, Wessex, Essex, Sussex and Kent. |
| AD 516 | Battle of Badon: Britons under an unknown leader defeat Angles and Saxons. |
| AD 597 | St Augustine brings Christianity to England from Rome King Æthelberht of Kent gave him land in Canterbury to build a church. Æthelberht became the first Anglo-Saxon king to turn his back on paganism and become Christian. |
| AD 600 | Anglo-Saxons gradually take over England. |
| AD 617 | Northumbria becomes the Supreme Kingdom. |
| AD 627 | Edwin of Northumbria becomes the first Christian king in the North of England. |
| AD 779 | Mercia becomes the Supreme Kingdom. |
| AD 793 | The Vikings attack from Norway. |








Statue of St Aidan and the priory at Lindisfarne.

Spanish

All About Me

Year 5

Key Vocabulary - Hobbies and Activities

| | | | |
|--|---|---|---|
| cocinar  | patinar  | montar en bici  | viajar  |
| usar el ordenador  | jugar al tenis  | leer  | bailar  |
| ir al cine  | andar  | | |

Key Vocabulary - Opinions









| | | | |
|--|--|---|--|
| Me encanta  | Me gusta  | No me gusta  | Odio  |
|--|--|---|--|

¿Qué te gusta hacer? What do you like to do?

Me gusta patinar **pero** odio viajar. [I like to skate **but** I hate to travel.]

Me encanta cocinar **y** montar en bici. [I love to cook **and** to ride a bike.]

Key Vocabulary - Jobs

| f = feminine | | m = masculine | |
|---|---|---|---|
| profesor (m) profesora (f)  | doctor (m) doctora (f)  | peluquero (m) peluquera (f)  | mecánico (m) mecánica (f)  |
| enfermero (m) enfermera (f)  | granjero (m) granjera (f)  | bombero (m) bombrera (f)  | cocinero (m) cocinera (f)  |

¿Cómo se escribe? How do you spell it?

Á/É/Í/Ó/Ú con tilde

A/E/I/O/U with an accent



Me llamo **Lucía**.
My name is Lucia.

¿Cómo se escribe?
How do you spell it?

Se escribe **L-U-C-Í** con tilde- **A**.
It's spelt L-U-C-I with an accent-A.



vocabulary:

confident

confused

minority

majority

respond

communicate

choice

pressure

stress

sensitive

You need to know:

How to become sensitive to the feelings of other people

How to make other people feel good about themselves

How to work collaboratively

How to respond respectfully to another's point of view

The skills needed to resolve a conflict

What is an inappropriate touch or behaviour

Who are the people we trust



worried



anxious



afraid

PSHCE Knowledge Organiser



Houses of Parliament

| | |
|-------------|--|
| Who? | |
| What? | |
| When? | |
| Where? | |
| Doing what? | |

Core concepts/skills:

- Asking questions can help you understand something
- Asking questions can help to improve or change things
- Throughout history people have asked questions and challenged the way things are done to bring about change
- An important role of Parliament is to question and challenge the Government.



Asking questions is so important that time is set aside at the beginning of the day in both the House of Commons and the House of Lords, just for asking questions.

vocabulary

curiosity

learning from mistakes

ask

change

courage

improve

challenge



Emily Wilding Davison was a suffragette who questioned why women were not allowed to vote.



Year 5 – rights and responsibilities

Vocabulary:

jobs

salary

part-time

full-time

temporary

permanent

paid

unpaid

volunteer

1. If you get paid a **salary**, this is when you are told the amount of money you will earn in one year. You will normally receive the same amount of pay every month in your bank account.
2. Some people get paid an **hourly rate**, when you earn a set amount for every hour that you work. The more hours you work, the more pay you'll receive.
3. You can get paid **piece work** – this is when you're paid a set amount for every item you make. The more items you produce, the more you'll be paid.
4. Sometimes people get **commission** – this is mostly for sales jobs, when you receive a share of all the sales you make. Often you will get commission as an extra on top of your salary.



1 – Listen & Appraise: Livin' On A Prayer (Rock)

Structure: Intro, verse 1, bridge, chorus, intro, verse 2, bridge, chorus, guitar solo, bridge, chorus.

Instruments/voices you can hear: Lead vocal, electric guitar, bass guitar, drums, keyboard.

Can you find the pulse as you are listening? Is the tempo fast, slow or inbetween? Dynamics? Texture?

2 – Musical Activities using glocks and/or recorders

Warm-up games play and copy back using up to 3 notes – G, A + B.

Bronze: G | Silver: G + A | Gold: G, A + B. challenge.

Which challenge did you get to?

Singing in unison.

Play instrumental parts with the song by ear and/or from notation using the easy or medium part. You will be using G, A + B or D, E, F# + G

Which part did you play?

Improvise using up to 3 notes – G, A + B.

Bronze: G | Silver: G + A | Gold: G, A + B challenge.

Which challenge did you get to?

Compose a simple melody using simple rhythms choosing from the notes G, A + B or G, A, B, D + E (Pentatonic Scale).

3 – Perform & Share

Decide how your class will introduce the performance. Perhaps add some choreography? Tell your audience how you learnt this song and why. Record the performance and talk about it afterwards.

The performance will include one or more of the following:

Improvisations • Instrumental performances • Compositions



About this Unit

Theme: Rock anthems.

Facts/info:

- Livin' on a Prayer is a Rock song that was released in 1986.
- The words tell us about life in the 1980's.

Listen to 5 other rock songs:

- We Will Rock You by Queen
- Smoke On The Water by Deep Purple
- Rockin' All Over The World by Status Quo
- Johnny B. Goode by Chuck Berry
- I Saw Her Standing There by The Beatles

Vocabulary: Rock, structure, pulse, rhythm, pitch, bridge, backbeat, amplifier, tempo, texture, dynamics, chorus, bridge, riff, hook, improvise, compose

Reflection

What did you like best about this Unit? Why? Was there anything you didn't enjoy about it? Why?

Did you have any strong feelings about it? Were you proud of yourself, happy or annoyed?

What are the 'style indicators' of Rock music?
How do you know this is Rock music?

1 – Listen & Appraise: The Three Note Bossa & Five Note Swing

Structure (Three note Bossa): Intro tune, lead tune, lead repeated, improvisation, lead repeated.

Structure (Five note Swing): 8-bar intro, the same 8 bar tune repeated, middle 8, head, head repeated.

Instruments/voices you can hear: Piano, bass, drums, glockenspiel

2 – Musical Activities using glocks and/or recorders

Play instrumental parts with the music by ear using the notes G, A + B and D, E, G, A + B.

Improvise in a Bossa Nova style using the notes G, A + B.

Improvise in a swing style using the notes D, E, G, A + B.

Did you play both? Which notes did you use?

3 – Perform & Share

Decide how your class will introduce the performance. Perhaps add some choreography?
Tell your audience how you learnt this song and why.
Record the performance and talk about it afterwards.

The performance will include one or more of the following:
Improvisations • Instrumental performances



About this Unit

Themes: Jazz and improvisation, and Swing.

Facts/info:

- Bossa Nova originated in South America.
- Swing became popular in the 1940s.

Listen to 4 other bossa nova or swing pieces:

- Desafinado by Stan Getz (swing)
- Cotton Tail by Ben Webster
- 5 Note Swing by Ian Gray
- Perdido by Woody Herman

Vocabulary: Appraising, Bossa Nova, syncopation, structure, Swing, tune/head, note values, note names, Big bands, improvise, pulse, rhythm, pitch, tempo, dynamics, riff, hook, solo

Reflection

What did you like best about this Unit? Why? Was there anything you didn't enjoy about it? Why?

Did you have any strong feelings about it? Were you proud of yourself, happy or annoyed?

What are the 'style indicators' of Bossa Nova and Swing?

How do you know this is Bossa Nova or swing music? Can you find out more about Bossa and Swing?